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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

46148

SEP 2 -

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REPORT FOR THE WEEK ENDING SEPTEMBER 2, 1939.

HAVRE:

Several thunderstorms occurring mostly at night, attended by light precipitation followed by clear, hot days, typified the weather. Rainfall in August totaled only 0.70 inch, whereas evaporation measured 8.678 inches, a new high record for the month. Precipitation during the important growing season months, April - August, was 7.73 inches, only slightly below average; however, 4.43 inches came in June, with each of the other months receiving below normal rainfall.

Owing to continued drought, corn projects except late plantings all have been cut and shocked. Very few ears formed in any of the DLA plots except the MC series where light grain yields will be obtained.

Stacking rye hay in field E-2 was finished. Winter rye for seed in field C has been threshed and also feed grain in field E-1. The flow in Beaver Creek has nearly ceased, no further irrigation water for alfalfa being available. However, the supply is ample for livestock.

Range studies at the mountain lease have been in progress during the week. Observations and other data are being obtained from protected, grazed, and deferred areas.

Maximum temperature, 99°; minimum, 43°; precipitation, 0.28 inch.

JUDITH BASIN:

The few showers during the week were of no consequence, and the greater part of the week was hot. On three days the maximum was 90° or above.

All threshing has been completed, and corn and potatoes are the only crops yet to harvest. Some ears are forming on corn, but with the continued drought it is doubtful if any grain will mature.

A number of farmers in the area have planted winter wheat during the week. Conditions are not favorable at present with soil being so dry. We have recorded but 1.46 inches of precipitation at the station since the 25th of July. During this period only two rains were over 0.25 inch, neither exceeding 0.30.

Pastures are very dry and only small gains are being made by the steers on native grass. Indications are that this group will complete this year's test next week.

The total rainfall for August was 0.75 inch. The 30-year average for August is 1.51 inches. The total rainfall for the year to September 1 is 2.16 inches below the 30-year average of 11.25 inches.

The average mean temperature was 2° above the station average and was the sixth hottest August on record at this station.

Maximum temperature, 94°; minimum, 45°; precipitation, 0.15 inch.

HUNTLEY:

Relatively high temperatures together with hot winds and a scarcity of soil moisture resulted in marked deterioration of all crops during the week. Corn, sorgo, and soybeans fired badly and were harvested as a salvage measure before reaching full maturity. Ear corn is fairly well filled on most plantings, and a nearly average crop of grain is expected. Although most of the corn appears to be rather short, the unusually good stand on most plots may bring stover

yields about up to average also. Alfalfa seed appears to be filling, but the pods are not as numerous as desired.

Fall tillage and seeding of winter wheat is under way on neighboring benchland farms. On the plots fall plowing and seedbed preparation was begun near the close of the week. As usual the soil is very dry and either breaks up in large clods or pushes aside as dust with the passage of the tillage implement. Seedbeds for winter wheat and rye are consequently in poor condition for planting at present.

Other field work has consisted of threshing the winter wheat smut nursery, weighing hogs on the pasture plots and moving them to the sorgo-soybean combination pasture, and rogueing alfalfa seed plots. Part of one day was consumed in extinguishing a grass fire which threatened station lands. Many thousands of acres of nearby range and stubble lands were burned over during the week and much winter grass and reserve feed was destroyed.

Maximum temperature, 101°; minimum, 43°; precipitation, 0.02 inch.

DICKINSON:

High temperature and a dry soil have caused rapid maturity or development of fruit, garden, and field crops. Night temperatures have been relatively cool. The mean temperature for the month of August was 66.1°, which is slightly below normal. The maximum temperature for the month was 101° on the 27th. Precipitation of 2.49 inches was the highest received in August since 1932. A total of 14.96 inches was received during the 8 months, January - August.

Corn on the rotations is being cut today. It has dried up rapidly during the week without making as much increase in grain production as seemed possible after the good rains early in the month. An unusual amount of rust has developed on corn this year.

Threshing was completed August 30 after having lasted longer than in any recent year.

Picking of crabs, plums, and tomatoes was continued. Yields are fair to good, and the quality of the fruit is better than for several years.

Maximum temperature, 101°; minimum, 46°; precipitation, trace.

MANDAN:

<u>Agronomy</u> - The past week was favorable for field work. It was hot on three or four days but cooler towards the end of the week. Hot winds and high temperatures occurred on the 26th and 27th.

Cutting of corn in the rotation plots was completed early in the week, and corn varieties were harvested. Sudan grass for feed in field P was also cut.

A heavy rain with a trace of hail fell on the evening of the 31st. The 0.62 inch of rain at the station fell in about half an hour. There was 1.18 inches of rain at the pasture. All the dams were full and running over. Severe hail damage, reported to be the worst in years, occurred southwest of the station.

The total precipitation for August was 2.19 inches, or nearly an inch above the station normal.

Maximum temperature, 101°; minimum, 55°; precipitation, 0.64 inch.

Cooperative Grazing Experiment - On Monday morning, August 28, one steer was found dead and another in a serious condition in the 100-acre pasture. The cause of the trouble is not definitely known. It was determined that no serious disease was present. There is a possibility that lightning may have been responsible, as there were thunder storms on both Saturday and Sunday evenings. The steer still alive is in very poor condition.

The steers made fair gains for August, except those in the rotation pasture. For some reason they have not made as good gains as they should. They have not been short of feed at any time during the season.

Gains of yearling steers on the various pastures during August and for the season.

Pasture (acres)	No. of Steers	Gain in pounds per head August	110 days
100	10	50.0	225.0
70	10	48.0	229.0
50	10	40.0	220.0
30	10	44.0	220.5
70 (Rotation)	14	33.6	193.6
7 (Crested wheat)	4*	28.8	-
12.5 (Crested wheat)	6*	36.7	-
93 (Reserve)	6	52.5	235.0

*On native pasture during August.

Horticulture - Fruit picking was carried on during the early part of the week. The recent hot weather ripened some varieties prematurely with consequent lack of size and quality. Others were so damaged that they were usable only for seed purposes. Tomatoes suffered more heat damage this past week than at any other time this season. This will cut down the yield of self-determining varieties, such as Bison, Allred, Redskin, etc. very materially. On the station varieties, mostly of Earliana habit of growth, there is considerable green fruit which after the recent rains should produce a fair crop.

Other work included cutting out dead wood in the orchards and removing broken limbs of various fruit trees, cleaning and stratifying seed of fruit crosses, and budding and hoeing in the orchards.

Irrigating of blue grass lawns has been in progress with fall feeding of Vigaro added this time.

BELLE FOURCHE: (Report for the two weeks ending September 2, 1939.)

Unusually warm weather prevailed during most of the period, and precipitation was limited to 2 light showers. The soil has again become dry, and grass which resumed growth after the rains received earlier in the month, is turning brown. Corn has been unable to make further progress, and is a total failure except on summer fallow, the average height of the crop being less than 12 inches. Sorgo has hardly made sufficient growth to justify harvesting, and potatoes have remained at a stand still.

The total precipitation for August was 1.85 inches, which is 0.46 inch above the 31-year average for the month. The total precipitation for the year to date is 8.45 inches. The average for the 8-month period is 12.30 inches. Temperatures during the month were about normal, but the evaporation and wind movement were considerably less than average.

Visitors included Dr. C. E. Leighty; R. L. Throckmorton, Kansas State College, Manhatten, Kansas; Max Myers, South Dakota State College, Brookings; L. H. Mitchell, Bureau of Reclamation, Washington, D. C.; and Val Kuska, Chicago Burlington Quincy Railroad, Omaha, Nebraska.

Maximum temperature, 98°; minimum, 40°; precipitation, 0.24 inch.

ARCHER:

Continued warm, dry weather marked the last half of August. The total precipitation during August was 0.97 inch. The total for the year to date is 6.82 inches. The 26-year average for the same period is 11.02 inches.

Most of the corn is drying up, therefore cutting was started September 1. The seeding of winter rye on fallow land in the dairy field will be completed today. Plots have been staked in preparation for seeding winter wheat. All plots which are to receive fall tillage have been tilled, except the subsoiled plots and those on which corn is growing.

Director W. L. Quayle of the University of Wyoming and A. D. Ellison and Kenneth Fiero of the Soil Conservation Service were station visitors.

Maximum temperature, 91°; minimum, 49°; precipitation, 0.26 inch.

NORTH PLATTE:

Another week has passed with no rain. The only rain of any consequence during the past two months fell on August 7. The precipitation for August was 0.89 inch below average, and the precipitation recorded since January has been 11.41 inches or 3.70 below average. Temperatures during the day have been near the 100° mark this week.

Several plots of corn were cut and shocked during the week. Most of the corn harvested has very few ears and the leaves and stalks are burnt. The plots which have not been cut are those on which corn is planted in 80 or 120-inch rows or after fallow and corn. Sorghums after fallow look good but those after smallgrain are burnt and poorly headed.

The Sudan grass seeded in the roadways has made a good growth and will give protection from water and wind erosion during the winter and spring. Some wheat has been seeded in this area, but much of it will not be seeded until the last half of September because of dry seedbed and danger of Hessian fly damage. The fly has been found in several fields in western Nebraska this year for the first time.

Doctors H. M. Tysdal and H. L. Westover were station visitors during the week.

Maximum temperature, 96°; minimum, 60°; precipitation, none.

AKRON:

Maximum temperatures were above 90° each day. Two rains were received to swell the August total to exactly 1 inch; less than half the normal. The total for the year to August 31 is 8.94 inches.

Proso millet harvesting, field weeding, and current regulation seeding occupied the station force.

Tepary beans in the variety experiment are setting pods on plants that in most cases could be covered by a quart cup. The most drought resistant of any of the dry beans, this variety is finding the seasonal moisture almost below the required minimum. The yearly and seasonal moisture has been below the requirement for even straw or stover production of the drill- and row-seeded crops on small grain stubble land preparation. The light rains have been sufficient to prevent burning of the grain sorghums seeded on fallow, and they are ripening a very promising crop normally.

Dr. A. C. Hildreth and Mr. Brown of the Cheyenne Horticultural Station visited Friday.

Maximum temperature, 95°; minimum, 53°; precipitation, 0.24 inch.

COLBY:

Hot weather returned this week with the highest temperatures of the month. Rain threatened on several occasions, but almost none fell. It has been windier, too, with some soil blowing on Sunday and Friday.

The corn continues to dry up. On fallowed land the sorghums are making some progress toward maturity and do not seem to wilt so much they did some time ago. They are already heading out much better than seemed possible a week ago.

Weeds started on fallow fields following the showers about two weeks ago. They were making such rapid growth that it was necessary to work the ground. All the fallow plots, except the duckfoot and onewayed plots, were rod weeded. This also broke the crust and roughened the smooth surface.

Precipitation for August, 1939, 1.72 inches; 52-year average, 2.22 inches. Precipitation, January - August, 1939, 12.7 inches; 52-year average, 13.75 inches.

Maximum temperature, 100°; minimum, 62°; precipitation, 0.04 inch.

HAYS:

The past week has been another dry, hot one. Maximum temperatures ranging between 97° and 107° accompanied by moderate winds caused severe wilting and even burning of crops, some of which showed considerable promise after the rains the first of the month. Although the crops are much dwarfed and burned, little of the forage has wasted away. It is so dry, however, that farmers are now cutting their feed crops. The tonnage will be very low.

The only plot of corn that approaches normal is that planted on the fallow of the CC series. It averages about 4 feet high. It is about 100% in tassel but has very few ears none of which show any silks. The silks have been cut off by worms. The corn on other plots in fields A and B is very short, uneven, and has no ears. In field C the corn made a little better growth but there is little prospect for grain.

Kafir on the CC fallowed plot ranges from 24 to 36 inches high and is even over the plot, however, it is wilting severely and some of it is burned. There are no signs of heads on this plot. On the other CC plots it ranges from 8 to 18 inches high and is very poor.

Dwarf Yellow milo on the CC fallow plot averages about 44 inches high, is quite uniform, and is now from 75 to 80% headed. It is the only growing crop on the project that now gives promise of a worthwhile grain yield. The heads emerging, however, are small and pinched. The crop is wilting severely and must have rain to finish. Other plots of Dwarf Yellow milo are very poor.

Kafir and milo crops on diked plots made considerably more growth than that on the undiked plots, but now are suffering fully as much and possibly more.

In the paper-mulch experiment the kafir on the mulched plots has made nearly three times as much growth as that on the plots not mulched, but it is now suffering from drought as much as that on the plots not mulched.

Maximum temperature, 107°; minimum, 66°; precipitation, none.

GARDEN CITY:

This week was one with high temperatures and no rainfall. On two days the maximum was 99° and 95°, and on all the rest 101° or more. Except for the above two temperatures, the maximums for the past ten days have been 100° or more. On September 1, the maximum reached 105°, which is the highest on record for September.

Rainfall for August was 0.87 inch. The average for that month is 2.24 inches. The total thus far this year is 8.71 inches, which is 4.33 inches below average. Dust occurred on one day during the week.

Row crops continue to decline. Some wheat has been seeded in the county, but this was done mainly for pasture.

D. A. Savage from the Woodward station was a visitor.

Maximum temperature, 105°; minimum, 63°; precipitation, none.

TUCUMCARI:

Following comparatively cool, cloudy weather the first half of August, the last half was marked by higher temperatures, no precipitation, and rapid drying of crop and range land. Conditions have changed for the worse daily over the past 10-day period, and early sorghums are expected to lodge after "drying ripe". Precipitation in August was 1.88 inches, 1 inch below normal. Total for the year to date, 9.09 inches, is 3¼ inches below normal.

Work included pulling and seeding early broomcorn, continuing stalk counts of sorghums, and late cultivation.

A visit to the plains south of Tucumcari and one about 100 miles west during the week indicated precipitation has been heavier in those localities. Wheat on the plains is generally up, seeding taking place unusually early. Range grass to the west has been lightly grazed, is in full head, and ranchers report it in the best condition in many years.

The party on the Great Plains Tour visited the station Wednesday. Other visitors included E. W. Johnson, Woodward, and Tom Holder, deputy State Game Warden, Taos.

Maximum temperature, 97°; minimum, 62°; evaporation, 2.904 inches.

BIG SPRING:

The weather has continued dry and unusually warm for the first part of September. The high temperatures with no precipitation are changing the crop prospects materially from what they were two weeks ago. Many fields of grain sorghums are burning just at the time when they are trying to head out.

The cotton leaf worm infestation which threatened to cause considerable damage now seems to have abated. Many farmers did not have to spray at all and others only once. The dry weather is now causing the early cotton to open rapidly during the past few days.

Station work has consisted of hauling in Sudan grass hay, shocking cowpea hay, and bagging sorghum heads for seed. Some cowpea seed was also picked, and some dirt was hauled to feed pens.

Maximum temperature, 100°; minimum, 61°; precipitation, none.

LAWTON: (Report for the two weeks ending September 2, 1939.)

Dry weather and extremely high temperatures the past two weeks have punished sorghums and cotton severely. Foliage on sorghums has fired extensively, and much of it has been lost by strong south winds. Lodging is developing rapidly. Cotton on the rotation plots fruited quite heavily in early August, but the plants are wilting and burning under the high temperatures of 100° to 109°. Shedding is extremely heavy, and the partly developed bolls will crack open unless relief comes shortly. Considerable spraying was necessary a week ago to control the Garden Web worm and the Cotton Boll worms that were migrating from an adjoining field of alfalfa. Considerable damage was done on one or two plots by the cotton boll worm, in spite of the fact that control measures were initiated promptly.

It has been apparent for some time that kafir, sorgo, and feterita in the rotations and the methods of tillage plots would not produce grain. The behavior of the crops as they approach maturity shows definite evidence of the root rot fungus diseases that have been so injurious this year. Observation of sorghum fields in the surrounding country indicates a wide spread infestation on these root rot organisms. Identification of organisms, made by Dr. K. Starr Chester, A. & M. College, Stillwater, Okla., shows that Fusarium sp. and Sclerotium bataticola are the most virulent of the root rot complex that is so prevalent.

The average maximum temperature for the five days, August 29 to September 2, was 105.6°. The highest temperature for the period was 109°, and that is the highest ever recorded at the station in September.

Recent station visitors include J. J. Morgan and Dr. John H. Martin, Washington, D. C.; Professors C. E. Sanborn, Ephriam Hixon, and C. F. Stiles, Stillwater, Okla.; and J. R. Quinby and J. C. Stephens, Chillicothe, Texas.

WOODWARD:

The past week has remained hot and dry. During the last 9 days, the maximum temperature has ranged from 100° to 108°. The 108° maximum occurred on September 1. This is also the maximum for this year to date.

The August precipitation amounted to only 0.85 inch. This fell on four dates. The largest amount of precipitation occurring on any date during the month was 0.42 inch. The last precipitation of any consequence was 1.16 inches on July 22, which fell so rapidly that there was a heavy run-off and for that reason was not as effective as it should have been. All row crops, even those on fallow, are now suffering severely.

Work during the week has consisted of picking peaches, grapes, and tomatoes; making grape and tomato selections for seed; grading roads; and mowing Sudan and kafir sowed feed which was planted as preparation for grass planting in the spring.

The weekly soil moisture samples were taken, and the semi-monthly sage brush mowing on ranches north of town was made.

A grain judging school for 4-H Club members was held by the County Agent, and a group of about 20 farmers from Ellis County accompanied by the County Agent visited the station.

Maximum temperature, 108°; minimum, 65°; precipitation, none.

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SEP 5 - 1939

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REPORT FOR THE WEEK ENDING SEPTEMBER 9, 1939.

HAVRE:

Somewhat changeable weather prevailed. A maximum temperature of 91° on the 4th was followed by a minimum of 37° on the 6th. Frost has not yet occurred at the station, although light frosts have been reported nearby.

Soil samples were recently obtained from corn plots in the MC series and from the Methods of Fallow project in field B. Stubble land is extremely dry and even fallow lacks sufficient surface moisture for uniform germination of winter wheat. Fall plowing for winter wheat is now in progress, but conditions are too dry for satisfactory work.

Yearling heifers at the Bear Paw lease were rounded up, counted, and weighed, averaging approximately 650 pounds per head. A series of 40 individual stalls for winter feeding trials is now being constructed for the yearlings in the cattle shed at the station. Forty heifer calves will also be fed individually in the beef barn.

Maximum temperature, 91°; minimum, 37°; precipitation, 0.35 inch.

JUDITH BASIN:

The average maximum temperature for the week was decisively lower than the average maximum weekly temperatures during July and August. A total 0.31 inches of precipitation was recorded for Tuesday and Wednesday.

Most of the week was devoted to cleaning seed and getting ready for fall planting.

Yields of winter wheat varieties were about the same as last year. The yields of the sixteen varieties ranged from 29.1 to 37.8 bushels per acre.

Planting plans for the winter wheat plots and nurseries have been completed. If weather conditions permit, seeding operations will begin the first of next week.

Visitors for the week included Dr. R. H. Bamberg from Bozeman, who spent two days at the station helping prepare planting plans for the winter wheat nurseries and plots.

Maximum temperature, 88°; minimum, 33°; precipitation, 0.31 inch.

HUNTLEY:

Weather has continued favorable for harvesting late crops such as corn, sorgo, and alfalfa. A large part of the dryland corn throughout this area is being cut for winter feed and present indications are that very little of it will be harvested by pasturing. Winter wheat seeding is continuing on fallowed lands where there appears to be some assurance that germination will be reasonably prompt. Stubble lands are so very dry that they will not be planted for a while.

Fall plowing and other tillage was completed on the experimental fields during the week. Because of the low moisture content of cropped lands those plots broke up in a very cloddy condition. Seedbeds for fall grains, except those on fallow, are very poor. It will take soaking rains or snows to wet down fall-tilled ground enough to sprout winter wheat seed.

The grass and stubble fires mentioned in last week's report are said to have burned over an area approximately 10 miles wide by 15 miles long. A few smaller fires occurred during the last 3 days of this week. The heavy growth of Downy Brome-grass, which is now dry and highly inflammable, is a serious fire hazard.

Maximum temperature, 89°; minimum, 38°; precipitation, none.

DICKINSON:

Hot days early in the week were followed by lower but seasonable temperatures. The soil is fairly dry so the new growth of grasses which started in August has now mostly dried.

Increase fields of corn were cut and run into the silo. Although stands of corn were thick the yields were only about average because of the short growth. Grain was fairly well mature with a moderate yield.

Sudan grass was harvested, making a good quality of forage and fair yields. Sorghums have more nearly approached maturity than in most recent years. Seeds of some of the grain sorghums grown in nursery rows have reached the milk stage of development. Some of these are earlier than Sooner Milo, of which a limited acreage has been planted in the district the last year or two.

Visitors included Dr. and Mrs. H. V. Harlan, Warren Whitman and Mr. and Mrs. Ralph Williams.

Maximum temperature, 93°; minimum, 38°; precipitation, 0.04 inch.

MANDAN:

Agronomy - The past week was favorable for field work. Weather for the week was generally cool, with some cloudiness and light showers. Fall plowing was started early in the week.

Crested wheatgrass started fall growth after the rain of August 31.

Maximum temperature, 91°; minimum, 38°; precipitation, 0.03 inch.

Cooperative Grazing Experiment - Crested wheatgrass started new growth after the good rain of 10 days ago. Blue grama also greened up to some extent.

Horticulture - Fruit picking has been carried on all the week. Apples, crabs, and plums have been harvested.

The late hot and dry weather impaired the quality of a great many varieties. Yields this year, especially of apples, have been better than any previous year in the history of the station.

Pruning dead wood in orchards and grubbing out discarded trees in the seedling blocks has been carried on, and is being followed by the last cultivation of the season.

Irrigation of lawns with fall feeding of Vigaro was completed the early part of the week. There is already a great improvement noticeable in the health and vigor of the turf.

Propagation of tender bedding plants has been started and should be completed next week. So far frost has held off and available stock is in good condition.

Hardy chrysanthemums are commencing to bloom and seem unusually good this year. Gaillardias and hardy Phlox are still blooming in the hardy borders, as are also several hybrid rugosa roses.

SHERIDAN: (Report for the three weeks ending September 9, 1939.)

Weather over the last two weeks of August and the first of September continued alternately cool and unseasonably warm. Average temperatures the last two weeks were considerably above the station average. The average temperatures for the month of August was about 1° above the average.

Rain starting the morning of the 19th totaled 0.88 inch and delayed threshing for several days. Another light shower this week stopped threshing again. Total precipitation for August was 2.29 inches, nearly 4 times the normal for the month. The rains apparently were of little benefit to corn or to much of the earlier varieties of late forage planted at the ordinary planting time, but apparently prolonged the growing period of the later varieties of sorghums and the later plantings of the early varieties.

Threshing was also interrupted by the necessity of stopping to harvest the corn and a part of the forage sorghums in order to save the forage from drying up completely. On account of the small quantity of corn that matured, that crop was picked before cutting. Threshing of small grain was completed, except for a part of the spring wheat varieties, and winter rye and flax. Corn and sorgo in the rotations were harvested, as these crops dried up during the period from August 24 to September 5.

Some average yields of oats and spring wheat in the rotations, in bushels per acre, are as follows:

	Disked corn	Sp. plow.	Fall plow	Fal-low	Green Manure	Maximum	Minimum	Average
Oats	45.8	30.4	29.6	55.5	51.9	60.6*	22.5**	38.0
Wheat	23.8	15.7	19.1	34.4	29.4	39.8***	13.5****	24.1

*Rot. 132 disked corn, and Rot. 19 fal. **F. P. after wheat.
Plot 0, latest plowed of fallow series.*Rot. 48 S. P. after sorgo.

Cheyenne yielded 52.3 bushels per acre, the highest of the winter wheat varieties.

Week of-	8/26	9/2	9/9
Maximum temperature	95°	96°	89°
Minimum temperature	37°	46°	41°
Precipitation	0.74	0.12	0.23

ARCHER:

The weather during the first part of the week was warm and clear, but was cold and foggy during September 7 and part of September 8. No precipitation of consequence occurred.

The corn on the rotation plots was cut during the week. Winter wheat was seeded in the rotation plots. Most of the seed was planted in dry soil. Winter rye seeded on fallowed land in the dairy fields has emerged with good stands. During the season the fallow was tilled twice with the eccentric one-way. Bean and potato vines are green.

Director W. L. Quayle of the University of Wyoming, Robert Lang, Assistant Agronomist of the University of Wyoming and O. K. Blake of the Soil Conservation Service were station visitors.

Maximum temperature, 89°; minimum, 42°; precipitation, 0.14 inch.

NORTH PLATTE:

Another week passed with no rain. There has been no measurable precipitation during the past three weeks. Temperatures were abnormally high the first half of the week. Temperatures over 100° were recorded on two days. The high temperatures caused some deterioration of the corn under irrigation and the sorghums on fallow. Cool weather prevailed the latter part of the week. The Early Kalo in the two-year rotation which was manured has failed to head, while that in the rotation which was not manured will produce a fair crop of grain.

A few plots were late fall plowed during the week. Weeds were mowed along fences. The buildings on the dry land station are being painted.

A county sorghum topping contest to be held at the station has been scheduled for the latter part of the month or in early October.

Maximum temperature, 103°; minimum, 50°; precipitation, trace.

AKRON:

The region was presented last Sunday with a sample of what will probably occur next spring. A not particularly hard but dust laden northwest wind opened the day and cut visibility to a quarter of a mile until noon, when the dust cleared away. Acre after acre of land to the north, northwest, and northeast was planted to row crops which never emerged, and has remained weedless throughout the summer. The very small portion of the row crops that did emerge never grew more than 20 to 30 inches, and cover is sparce and spindly in nature. There is thus no cover over a comparatively large localized area of soft land that not only is ready to blow, but is one of the worst types to render blow-proof. Fall rains, not now to be expected, might yet supply soil moisture sufficient to create a surface cover of rye. It is sincerely hoped some such sort of cover may yet be provided.

The week has been uneventful with current field work well in hand. A fight has been in progress the past two weeks to keep sparrows from destroying the second replication of grain sorghums. Some varieties have been damaged as much as 50 percent. Soil moisture conditions are still discouraging for seeding winter wheat.

Mr. Rogers, Production Credit Representative from Sterling called during the week.

Maximum temperature, 98°; minimum, 44°; precipitation, 0.05 inch.

COLBY:

This week has been hot, dry, and on three days, windy and dusty. The temperature rose to 100° or above on three days. At intervals there was more or less soil blowing on bare ground that had not been worked since the last rain.

Nearly all the corn was dried up beyond much further development before the hot weather set in this month. The sorghums which were making satisfactory progress last week have dried badly and do not look nearly so promising. Further heading seems to be checked for the time being. Many of the heads are showing color.

Considerable wheat was seeded the last two weeks in August, but when the hot weather returned in September most farmers quit seeding to wait for a rain or cooler weather. A few fields of the early wheat are up to fairly good stands, but on most fields the stands are spotted. The soil is dry several inches down, and drilling dries it out still deeper.

Maximum temperature, 105°; minimum, 50°; precipitation, none.

HAYS:

The weather is perhaps the most interesting point for consideration during the past week. The maximum temperatures were 100° or more 5 of the 7 days. Three days reached or passed 105°. Hot, burning winds prevailed. All feed crops either remained at a standstill or deteriorated, except on good fallow or in favored and protected spots.

In the paper mulch experiment the kafir on mulched plots burned as severely as that on the unmulched plots. It looks like there is little chance for revival of growth even though rain comes soon.

Corn reached the stage where it was deteriorating and the fodder was beginning to waste. It was harvested September 7.

Work during the week has consisted largely of collecting a number of soil samples for moisture determinations, of performing the final surface tillage of plots to be seeded to wheat. There was practically no vegetative growth on these plots, but the last tillage operation left the surface soil in rough condition for the reception of additional rain water. Since it has not rained, and is now so near seeding time, it was concluded that the surface soil should be partly leveled so that seeding may be done without additional tillage after it rains.

Maximum temperature, 109°; minimum, 57°; precipitation, none.

GARDEN CITY:

Only a trace of moisture was received this week, and no measurable rainfall has fallen for over 3 weeks. Wheat seeding time is approaching with very little moisture in cropped land and no moisture in the surface few inches. High temperatures continue, accompanied on a few days with rather high wind velocities. Dust occurred on 4 days, and some of it was due to local blowing.

Field work consisted of cutting the second crop of Sudan grass on a few plots and binding some of the corn. Soil moisture samples were taken for evaporation studies.

Maximum temperature, 102°; minimum, 56°; precipitation, trace.

DALHART:

The last rain was received on August 20. This rain, which amounted to 0.64 of an inch, lasted but a few days. It was during the period starting about then that sorghums started to head. Rather strangely, nearly complete heading occurred on most plots. Lack of moisture has been noticeable for about 10 days. Previous to September 1 the fall plowed and especially the fall plowed and subsoiled plots were better than the fallow plots. Since then the fall plowed plots have deteriorated rapidly and the fallow plots have continued near normal development.

Several thousand heads of sorghums were bagged this year. These are distributed through the various nurseries and head rows, and include some for an anticipated reserve seed supply of Finney milo and Sedan kafir.

Maximum temperature for the week was 103° on September 3 (this is a new high for September); minimum temperature, 58°; precipitation, none.

TUCUMCARI:

Mid-summer temperatures prevailed the past week, with ranges and crops suffering acutely. No precipitation has fallen since August 20, while total precipitation since June 1 is only 50 percent of normal for the period. The total for the year to date is 9.09 inches, compared with the long-time average of 12.70 inches.

A temperature of 101° on September 3 broke the maximum record for September. Mean temperature for the week was 81.8°. Evaporation, past 7 days, was 3.002 inches.

Range grama grass, in full head and the finest in several years, is drying up rather than maturing normally and ranchers fear stems will be brittle. Row crops are firing extensively, many losing nearly all leaves before grain is past the milk stage. Station crops are deteriorating daily, but their perseverance and tenacity are astonishing. Late planted sorghums which were in excellent condition 10 days ago, may produce no grain. Early planted crops will all produce some yield.

Maximum temperature, 101°; minimum, 64°; precipitation, none.

WOODWARD:

Another hot, dry, and windy week has passed. Maximum temperatures on all but one day have been above 100°. On 15 of the last 16 days the temperature has been 100° or above. Maximum temperature for that period has averaged 102.8°. No precipitation at all has been registered since August 18, and none in an amount large enough to be of any value since July 22.

Crops have dried rapidly during the past three weeks and particularly during the last week. Sowed feed which was 12 to 18 inches high in many places is burned dry and is flat on the ground. Row crops will make some grain but prospects for a good crop are in most cases gone. The plants are drying ripe and on many plots 50 percent of the plants have gone down.

The Woodward city water supply has been failing and during most of the past two weeks no water for any purpose has been available at the station or in many parts of the city during a good share of the day. The city officials requested that use of water on lawns and ornamental plantings be stopped. Plants in the Nursery have been kept alive by hauling water from the station lake. Two trucks with 550 gallon tanks have been kept on the job most of the time, hauling 25,000 to 30,000 gallons of water a day. A cistern has been dug which will be used to store water for use in emergencies. The city of Woodward has just completed another new well which is the second this summer. The water situation will be improved, at least temporarily.

Work during the week, other than construction of the cistern and hauling water, has consisted of harvesting peaches, grapes, tomatoes, and seed of various trees, shrubs and perennials; mowing Sudan and kafir sowed feed in preparation for grass planting in the spring; cultivation and grading of roadways; and plowing under cowpeas for green manure. A very rough job of plowing was done because of the dryness of the soil. Some lumps turned up which were so large that the plow had to be stopped to remove them from beneath the beam.

Maximum temperature, 108°; minimum, 67°; average hourly wind velocity, 10.4 miles per hour; evaporation, 3.431 inches; precipitation, none.

LAWTON:

The average maximum temperature for the 12 day period, August 29 to September 9 was 103.8°. Crop injury was the worst on September 3 when the wind velocity averaged 13 miles per hour for 9 hours and the maximum temperature was 108°.

Cotton fruited very satisfactorily during the first half of August, but the immature bolls have cracked open by heat and drought. The southwestern part of the state lost a fairly good crop of cotton during the 12 days above referred to. Seed are small and prematurely ripened. The fiber is weak and the yield will be light. A good many station plots will have to be picked in the near future. It is probable that snapping will be resorted to. One or more locks in each boll/have not opened normally and picking will be very difficult.

All sorghums in the rotations have been harvested. Only a very inferior, severely burned grade of forage was produced. Foliage on most of the fetorita was completely burned and in many instances the plants were too small to bind. About 20 grain sorghum plots in the standard variety test were headed during the week.

There has been no rain of any consequence since August 14. Native grasses have dried up and vegetation of all kinds has suffered intensely from high temperatures and the lack of moisture. Stock water is generally very scarce and there is but little feed except on sandy soils.

Water shortage for the city of Lawton has become very acute and the use of city water is strictly limited to domestic purposes.

BIG SPRING:

Hot, dry weather continued during the past week and cotton opened rapidly. The bolls are small and the premature opening makes it difficult to pick. Feed crops are burning so much that harvest in the near future will be required to save them.

The first picking of the cotton varieties was made during the week. Other work consisted of pulling broomcorn, picking cowpea seed and heading some sorghums varieties.

Dr. John H. Martin was a station visitor during the week.

Maximum temperature, 103°; minimum, 62°; precipitation, none.

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REPORT FOR THE WEEK ENDING SEPTEMBER 16, 1939.

HAVRE:

Weather during the week was attended by an unsettled period which resulted in 0.40 inch of precipitation. Slightly cooler temperatures prevailed, with a maximum of 87° on the 10th and a minimum of 39° on the 9th. The surface soil still remains too dry for uniform germination of fall sown grains. However, the cloudy weather and rains reduced the grass fire hazard.

Fall plowing in all projects has been completed. Winter wheat and winter rye plots in the D.L.A. project were sown September 16. A date of planting crested wheatgrass in abandoned land was made September 15, using a furrow drill to cut through the weeds and trash. Cleaning grain and taking test weights is in progress at the Agronomy seedhouse.

The construction of individual stalls for winter feeding yearlings is nearing completion. A 9-acre field of registered Ladak alfalfa with a fairly good set of seed was mowed and bunched for curing.

Gerald Behimer of the Soil Conservation Service spent several days at the station threshing grain samples obtained from fertilizer tests on the Power-Dutton project.

Maximum temperature, 87°; minimum, 39°; precipitation, 0.14 inch.

JUDITH BASIN:

Typical fall weather continued to prevail during the week. Part of the time it was cloudy, with showers on three successive days. The average maximum and minimum temperatures were five degrees lower than during the preceding week.

Station activity was concentrated mostly on seeding winter wheat, cutting corn, and cleaning crested wheatgrass seed. The winter wheat in the rotations and the Federal cereal nurseries and varietal plots has been seeded. The corn on the rotations was cut the latter part of the week, leaving the potatoes as the only crop remaining in the field.

Farmers in the vicinity of the station have speeded up their winter wheat planting to take advantage of the favorable seeding conditions.

Maximum temperature, 86°; minimum, 35°; precipitation, 0.31 inch.

HUNTLEY:

Light showers and lower temperatures throughout the week have been a slight break in the prolonged period of droughty conditions, although the amount of moisture received was of little benefit to crops.

Seedbed preparation for fall crops and planting of winter wheat and rye were completed on the dryland fields during the week. The third crop of alfalfa was mowed. Other field work included the final rogueing of alfalfa seed plots preparatory to harvesting.

A series of station tours was conducted on 4 days of the week during which time 225 farmers from Yellowstone and neighboring counties in Montana and northern Wyoming participated.

Maximum temperature, 89°; minimum, 35°; precipitation, 0.05 inch.

DICKINSON:

The first killing frost of the season was recorded on the night of September 9. Although the minimum temperature was only 32°, the leaves of tender vegetation including corn, sorghums, and tomatoes were killed in most situations. Much warmer weather followed with a maximum of 95° on the 12th. Precipitation amounted to only 0.05 inch. The soil is becoming rather dry so that a good rain would now be of great benefit.

Winter wheat was seeded on the rotations September 15.

Cobbler potatoes which were dug today were of good size and excellent quality. The yield was 147 bushels to the acre on summer fallow in rotation 414 and 124 bushels to the acre on spring plowed wheat stubble in rotation 415.

Maximum temperature, 95°; minimum, 32°; precipitation, 0.05 inch.

MANDAN:

Agronomy - Temperatures were moderate during most of the week. One day was warm for this time of year.

Winter rye was seeded early in the week, and sorgo varieties were harvested.

Crested wheatgrass has made a good fall growth since the rain of August 31.

A light frost during the night of the 10th damaged garden vines and leaves of sorgo.

Maximum temperature, 91°; minimum, 34°; precipitation, 0.12 inch.

Cooperative Grazing Experiment - The steers were turned back into the 12.5-acre crested wheatgrass pasture on the 13th. The grass had made enough growth to furnish some good pasture.

Horticulture - Fruit picking was finished on the 13th. There was a heavier yield of nearly all varieties of plums, plum hybrids, apples and crabs than for many years. A number of newer varieties of apples yielded exceptionally well as did also Hibernal, Wealthy, and Longfield of the older varieties. Wedge, Haralson, McIntosh and Guudhue appear quite promising for this section.

There was a heavy crop of all grape varieties under test. There was little winter killing and the difference in the yield of covered and uncovered vines was striking; the covered vines producing on an average 3 to 1 heavier crop than the uncovered ones.

Cultivating orchards and field plots was completed by the end of the week. Mulching the steeper hillsides in the east coulee orchard with straw to prevent soil erosion is being tried out for the first time, and was finished the early part of the week.

Picking tomatoes in the variety test and breeding project was begun the latter part of the week, and will be completed in one or two days next week. Propagating of geraniums and coleus is under way in the greenhouse. Frost has held off so far and canna beds and geraniums are at their very best at the present time.

Arboriculture - Collection of hackberry and Russian olive seed has been carried on during the week. Only a small amount of the former was available on station trees, and the latter crop is the lightest in several years excepting on a few trees on the grounds which have received irrigation in previous years.

All open land has been gone over with the duckfoot to roughen it and to destroy late weeds.

SHERIDAN:

Except for two days the first part of the week, temperatures were for the most part moderate, with no frost yet. Threshing grain was completed early in the week. The remainder of the corn was harvested, and the grain from all except the last harvested was hauled and weighed. Yields have not been calculated, but they are very light.

Tillage preparation for seeding winter wheat in the rotations was completed, and fall plowing in the rotations is now in progress. The August rains apparently softened the ground some, and while still too hard for plowing with a moldboard plow, the job of plowing with the disk plow is being done better than for several years.

Maximum temperature, 92°; minimum, 35°; precipitation, trace.

BELLE FOURCHE:

The weather was dry and unseasonably warm. Strong winds were of frequent occurrence and the evaporation was high. Only 0.11 inch precipitation distributed in 3 light showers has been recorded in September to date, and no rain beneficial to vegetation has been received since August 9. Land, summer fallowed in 1939, contains much less moisture than usual at this time of the season, and the first 6 inches of soil is throughly dry. Seeding of fall grain is being delayed, owing to the dry condition of the seedbed, and crop prospects at present are about zero. Shortage of feed and water on livestock ranges has become more acute, necessitating the early marketing of considerable stock.

Maximum temperature, 97°; minimum, 42°; precipitation, 0.11 inch.

ARCHER:

The weather during the week was warm and dry. This was favorable for harvesting silage. Bean and potato vines are still green. Most of the corn not yet cut is drying.

Station activities consisted of putting up silage and constructing fence for the pasture experiments.

Director W. L. Quayle of the University of Wyoming; Frederic E. Clements, Santa Barbara, Cal. ; Kenneth Fiero, Lander, Wyoming; Harry E. Malmsten and R. L. Copple, Lincoln, Nebraska; A. E. Hyde, Briggsdale, Colorado; and Earl W. Parsons, Charles W. Townsend, and E. J. Hager, Amarillo, Texas, were station visitors.

Maximum temperature, 89°; minimum, 34°; precipitation, trace.

NORTH PLATTE:

Four weeks have passed during which time only a trace of rain has been recorded. No wheat has been seeded. Fallow plots have about three to four feet of moisture but the surface soil is too dry to germinate wheat. Temperatures have been abnormally high for this time of the year. High winds the first four days of the week caused considerable soil movement from unprotected fields.

The sorghums are drying and harvesting will be started within a few days. Pastures continue to be very dry and some supplementary feed is necessary. Harvesting corn plots was completed during the week.

Maximum temperature, 101°; minimum, 39°; precipitation, none.

AKRON:

The station passed 31 years before recording its first September temperature of 100° which was recorded the 12th.

Station work is well in hand. Many of the grain sorghum varieties have been harvested. Proso harvesting received attention. Dry beans on fallow are ripe. On stubble they are still green waiting for the rain that may enable them to produce a few beans. Harvesting of burned corn was also a part of the week's work.

Winter wheat seeding will doubtless be delayed until the last week in September in the hopes of rain, or at least of cooler temperatures.

J. J. Curtis spent Thursday and Friday at the station.

Maximum temperature, 100°; minimum, 44°; precipitation, 0.03 inch.

COLBY:

This was another hot, dry, windy, and dusty week until today. A gentle rain fell at intervals all last night, and today is cloudy and much cooler. The wind, blowing almost incessantly, hastened the drying up of sorghum crops and dried out the surface soil to such a depth even on well cared for fallow fields that farmers were afraid to seed. The cool weather and rain were very welcome, but so far the moisture has not penetrated deep enough for seeding.

The late plowing for wheat was done on the 15th. The ground was dry and turned up cloddy to dusty. The seedbed on these and practically all other plots in the D. L. A. project is as dry and loose as it ever has been at seeding time.

Maximum temperature, 98°; minimum, 50°; precipitation, 0.34 inch.

HAYS:

Although the temperatures were not as high as during the previous week the weather was generally hot and windy, and severe on crops which have been suffering for so long. This morning, however, it is partly cloudy, the wind is in the north and it is much cooler.

The feed crops continued drying out during the week and some of the leaves are wasting. Some of the sorghums from a distance appear to be as dry as if they had been harvested for some time. Despite this fact a few heads have been developed but as previously stated the seed crop will be extremely poor and many of our plots as well as many of the commercial fields will produce no grain.

Pastures are dry and leaves are beginning to drop from the deciduous trees and shrubs.

Maximum temperature, 100°; minimum, 58°; precipitation, none.

GARDEN CITY:

Most of this week was a series of high temperatures and wind velocities. The maximum temperature was in the 90's on every day except Saturday when it was 71°. On four consecutive days the wind velocity ranged from 17.3 to 18.3 miles per hour. Five days out of the seven were dusty. Two trace of moisture was received. No measurable precipitation has fallen for over four weeks.

Most of the row crops are burned beyond recovery, and the only yields that will be obtained are on one or two milo on fallow plots and on milo in wide rows. A Field Day will be held at the station on September 29.

Station visitors were J. H. Martin of Washington, D. C., J. W. Slosser, Soil Conservation Service, Guthrie, Oklahoma; and L.P. Reitz&E.G. Heyne of the Agronomy Department, Kansas State College.

Maximum temperature, 98°; minimum, 59°; precipitation, trace.

DALHART:

Cooler weather has apparently arrived with the rain which fell last night. The rain fell throughout the night, and, from reports, was general over this immediate territory.

Work this week has consisted largely of opening sacks on the bagged sorghums, final seasonal cleanup of fence rows, soil sampling, repairing tree protectors in the conifer planting, and general note taking. The conifer planting now shows nearly complete stands for the species included in the test.

Dr. John H. Martin inspected the Cereal Division sorghum project on the 12th and 13th.

Maximum temperature, 94°; minimum, 52°; precipitation, 0.45 inch.

TUCUMCARI:

Rain which continued from six o'clock last evening throughout the night and early morning totaled 1.17 inches, breaking one of the most extreme late summer droughts and heat waves on record.

This is the first precipitation of value since August 2. From May 1 to September 15 only 46 percent of the normal precipitation fell.

The mean temperature of 80° for the first half of September was higher than that for June or August and equaled that of July. Evaporation for the half month just past was at the rate of over 12 inches per month.

Crops and ranges deteriorated rapidly throughout the past half month. Many sorghums died before full maturity, lodging almost immediately. Heading of grain sorghums has been underway the past week, with a number of corn and grain- and forage-sorghum plots being cut.

The rain should benefit late planted sorghums and ranges. Where land has been too dry for wheat seeding, it will now be possible to seed.

Maximum temperature, 94°; minimum, 53°; precipitation, 1.17 inches.

BIG SPRING:

Unusually hot, dry weather continued to prevail for the past week. Wind velocity was very low, but temperatures remained exceptionally high for the middle of September. As a result, small immature cotton bolls are opening rapidly, and picking is getting under full headway. Yields will probably be reduced to nearly half of what they were estimated a month ago.

The sorghums are either maturing prematurely or burning up without maturing. Many of the sorghum varieties were harvested this week. Generally speaking the May 15 and the June 15 dates of sorghums are very light, while the June 1 date will produce fair grain yields.

Station work has consisted mainly of cutting increase sumac and filling the trench silo. About 120 tons of silage was put in the trench during the past three days. Other work has consisted of picking cotton and harvesting kafir in the rotations.

Mr. J. M. Jones, Chief of the Division of Animal Husbandry of Texas A & M was a station visitor this week.

Maximum temperature, 96°; minimum, 63°; precipitation, none.

WOODWARD:

The past week was windy but not so hot. The temperature went to 100° on only one day and the maximum was in the high 90's the rest of the week. Wind velocity for the week was more than 3½ miles per hour above the 25-year September average. Wind velocity for the last two weeks averaged 10.7 miles per hour, and no precipitation has been recorded since four weeks ago today, at which time only 0.13 inch fell. No precipitation of any value has fallen in the past eight weeks.

Crops had suffered so severely previous to this week that they did not seem to deteriorate as rapidly as during the past few weeks. Considerable grain will be matured, but some varieties and methods will produce scarcely any and much of it will have to be picked up off the ground. On the Cereal project, 50 to 90 percent of the plants of a number of varieties are flat on the ground.

The first rate-date planting of wheat on the Cereal project was planted September 15. This was planted on fallow which was so dry that it is doubtful if there will be any germination until precipitation is received. Regular samples were taken for soil moisture determinations. Cowpeas were harvested for hay. Vineyards, orchards, windbreaks, plot roads, etc., were given a final disking in preparation for planting wheat as soon as moisture is received. These are usually planted to wheat to control soil blowing as soon after September first as moisture is available. Grapes and other fruits have been picked, some grass seed harvested, kafir seed fields have been rogued, some work has been done on the fence around the new land, and some work done in preparation for an exhibit at the local fair. Hauling water from the lake with two trucks has been continued.

Maximum temperature, 100°; minimum, 63°; precipitation, none. Average hourly wind velocity, 10.9 miles per hour.

LAWTON:

A slight break in temperatures the past week marks the only relief from the September heat and drought. During the past seven days the maximum temperatures varied from 92° to 98° - the first time they have been below 100° since August 28. The wind velocity has been a little higher than usual and the evaporation for the first 15 days in September exceeded 5 inches.

About 3/4 of the rotation plots of cotton were harvested during the week and considerable harvesting and threshing were done in the grain sorghum variety tests.

Yields of cotton in the cotton variety test including approximately 70 varieties and strains will be a near failure. Small differences exists but the comparisons will be of little value.

Farm operations are discouraging, to say the least. Practically nothing has been produced in the way of cash crops during the year and there is but little feed available. Water supplies for both human and livestock consumption are very low in many places. Pastures are pretty well exhausted and as yet there is no soil moisture available for the seeding of small grains.

PENDLETON: (Report for the two weeks ending September 16, 1939.)

All field work in this section is at a standstill, as harvest of small grains has been completed and fallow fields are free of weeds. All field work is dependent upon fall rains, which usually start about October 20th. Work on the station has consisted of cleaning seed grain, chiseling stubble land, some dry fall plowing, and hoeing Russian thistles.

The following are the 1939 results in the depth of plowing experiments:

Shallow plowing	(5 inches deep)	37.2 Bu. per acre.	Av. of 10 plots.
Deep plowing	(9 inches deep)	37.3 Bu. per acre.	Av. of 10 plots.

This is the first year that the deep and shallow plowing yields are equal. The 1931 to 1938 average yields are 3.9 bushels per acre more for deep plowing than for shallow plowing.

Maximum temperature, 88°; minimum, 32°; precipitation, 0.09 inch.

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REPORT FOR THE WEEK ENDING SEPTEMBER 23, 1939.

HAVRE:

The weather continued warm, the mean temperature for the week being 10° above normal, with only 0.01 inch precipitation.

Registered Ladak alfalfa from a sub-irrigated field was threshed, a fair yield of good quality seed resulting in spite of drought during late summer and considerable damage from grasshoppers.

Permanent buffer areas in contour stripped field E-1 were sown with crested wheatgrass, a furrow drill being used to do the planting. A 55-acre stubble tract is also being sown to crested wheatgrass for later use as a calving pasture.

Several stacks of rather coarse alfalfa hay from the 1938 crop have been chopped and shredded by running through a grain separator with the concaves set up closely as a precaution against damage by large rocks, which upon striking the cylinder teeth are thrown back into the feed pan where they can be easily removed.

Visitors included Wayne B. Austin of the Soil Conservation Service, who inspected grass nursery plantings at the station and range conditions in this vicinity.

Maximum temperature, 86°; minimum, 39°; precipitation, 0.01 inch.

JUDITH BASIN:

The past week was dry except for a shower Friday afternoon. Temperatures were comparatively high with cool nights.

Field work consisted of digging potatoes, cutting bulk corn, fall plowing rotation plots, and seeding some increase plots to winter wheat.

Although the past two months have been extremely dry, some edible sweet corn is being produced in the variety test. Yields are low but the quality is much better than was expected.

Wayne W. Austin, Assistant Regional Nurseryman of the S. C. S., Lincoln, Nebraska, was an official visitor during the week.

Maximum temperature, 84°; minimum, 35°; precipitation, 0.14 inch.

HUNTLEY:

Warm days and relatively cool nights throughout the week together with coloring foliage on trees and shrubs are unmistakable indications of fall. No frost has yet been reported locally, although minimum temperatures have come close to the freezing point at times.

The last of the third crop of alfalfa was hauled in during the week, and a second cutting of Sudan grass was made. Alfalfa seed plots were mowed, and seed corn was picked and stored. Hogs on the corn plot of the pasture rotation were weighed and removed to the dry-pen for finishing. The acre of corn carried the 16 pigs for a period of 8 days, the animals making an average daily gain of but 1.40 pounds each. Undoubtedly a much higher gain would have been obtained if the animals had been removed a day earlier while feed was still easily available, rather than holding them on the plot to glean the fallen ears and shelled corn.

Visitors during the week included a group of 12 men from the Regional and District Soil Conservation offices.

Maximum temperature, 88°; minimum, 35°; precipitation, trace.

SHERIDAN:

Fair weather with warm days and cool nights, with one trace of precipitation, characterized the week. Grain sorghums began to ripen quite rapidly, and a large part of most varieties is now fairly ripe except in the latest seeding. Seed from isolated blocks of both forage and grain sorghums was gathered.

Fall plowing of rotation plots and seeding of all plots of winter wheat were completed. Dirt is being hauled and dumped into some of the ditches in Field O to try to stop some of the washing there.

Maximum temperature, 88°; minimum, 37°; precipitation, trace.

DICKINSON:

Fall plowing on the rotation plots was completed. The soil was so dry that a rough job resulted on most plots. However, they are not nearly so rough as a year ago. Precipitation during the winter soaked up the clods so that a good seedbed resulted in the spring, and fall plowed plots in general yielded a little better than spring plowed in 1939.

Most of the corn on the rotations was husked. Sorgo and a part of the grain sorghum plots were harvested today. Yields of the sorghums probably will be equal to or better than those of corn.

The last of the plums and crabs were picked. Vegetables were dug and stored.

Dry weather continued through the week with above normal temperature most of the time. A light frost was registered this morning.

Maximum temperature, 91°; minimum, 29°; precipitation, 0.02 inch; precipitation, September 1 - 23, 0.11 inch.

MANDAN:

Agronomy - Temperatures during the week were near normal for this time of year. A heavy frost occurred on the night of the 22nd.

Winter rye is up to a good stand.

Maximum temperature, 93°; minimum, 33°; precipitation, trace.

Cooperative Grazing Experiment - Flies have bothered the cattle during the month, but they appear to be doing well on their pastures.

Horticulture - Seeds of named plum varieties, bulk seed of P. americana, and hardy crabapples were cleaned and stratified for propagating purposes. Russian thistles and other noxious weeds lining the station roads were hoed and destroyed. The main crop of tomatoes was picked the early part of the week. There was a very good yield, But about 1/3 was unmarketable due to damage by sunscald. Fall vegetables such as onions, squashes, and pumpkins were harvested the latter part of the week. So far only minor frost damage to vines has been experienced. Cannas, coleus, and geraniums have escaped even a touch of frost and are still presenting vivid patches of color about the grounds. Hardy chrysanthemums, especially spring propagated stock, are looking very well at the present time. Fall planting of tulips and hardy lilies will be under way within a few days.

ARCHER:

The weather continued warm and dry during the week. A light shower during the evening of September 22 was followed by cooler weather the next day.

In this section most of the corn and sorghum to be used for forage is in the shock, and the bean harvest is in full swing. The bean yield on dry land will be light. It appears that while the supply of livestock feeds is short serious liquidation on the dry farms of this section will not become necessary.

Station activities for the most part consisted of fencing the pasture experimental areas and harvesting the last of the corn.

Maximum temperature, 86°; minimum, 37°; precipitation, 0.10 inch.

NORTH PLATTE:

For the fifth consecutive week no precipitation has been recorded. Very little wheat has been seeded in this section. Most fields have no available moisture. Those which have been fallowed have some subsoil moisture, but the surface is too dry for wheat to germinate. The DLA plots will be seeded next week with the hope of getting some moisture later in the fall.

The sorghum plots were harvested during the week. There has been considerable lodging in sorghum fields due to drying and breaking over of the stalks at the roots.

Maximum temperature, 93°; minimum, 45°; precipitation, none.

AKRON:

Current weekly rate and date seedings of winter wheat have been made with only fair emergence and survival on the fallow series alone. Grain sorghums are being harvested as they ripen. Some time was spent in making the station ready for the Sorghum Field Day held Friday.

This was sponsored by the Colorado Extension Service and attracted a crowd of some 2,000 individuals. It was managed by that organization augmented by State Experiment Station workers. The assembling of the cars into groups for the field stops was arduous at the peak incoming period. A public address system permitted the afternoon speaking program to be heard all over the grounds and outside the improvised auditorium which will seat about 375. Sandwiches and coffee were furnished by the Denver Chamber of Commerce, one hundred members of which came out on a special train.

Station winter wheat seedings will doubtless be made next week, although surface soil conditions are very unfavorable.

September has thus far produced 0.08 inch precipitation, the normal expectation being 1.44 inches.

Prominent State, Railroad, and City of Denver officials present Field Day are too numerous to mention.

Maximum temperature, 96°; minimum, 41°; precipitation, none.

COLBY:

The dry weather continued all week, so that much of the moisture which fell a week ago Friday night is about gone. It has been rather hot during the day but chilly at night. There has not been much wind until today. A chilly but drying wind is blowing from the north all day today.

The corn plots were cut this week. All the wheat plots are ready for seeding, but owing to the dryness of the surface soil on the fallow plots and the dryness of the subsoil as well as the top soil on the cropped plots, seeding is being delayed. Wheat seeded on fallow in the date of planting test is not coming up. Sorghums are practically ripe or dried up.

Maximum temperature, 95°; minimum, 40°; precipitation, none.

HAYS: The temperatures have been lower during the week, but drought continues.

For most part feed crops have been at a standstill; some have deteriorated. In this locality feed crops occupy a very small acreage. It looks as if there will not be enough feed produced for the livestock through the winter. There are fields on which the sorgo was drilled at a normal time for seeding on which the growth is now from 4 to 18 inches high. The latter is on low spots that benefited by some run-off from the higher points. The growth is brown, and if it were mown it would be too thin and too light to rake. Row crops are taller but will produce little more feed. The only fields that will make a fair yield are those which were well-fallowed or small strips in swales or low places.

On a 150-mile circular drive out from the experiment station yesterday only a few fields were observed that had been drilled to wheat and only three drills were seen in action. This is very unusual, as a number of farmers in every community usually commence seeding not later than early September. All the wheat thus far drilled is lying in the dust. There is not enough moisture within reach of a drill to germinate the wheat.

Harvesting Pink kafir on the plots will be finished today. The grain yield is a failure.

Maximum temperature, 95°; minimum, 39°; precipitation, none.

GARDEN CITY:

Temperatures and wind velocity lowered somewhat this week, but only a trace of moisture was received. No measurable amount of precipitation has fallen for over five weeks. A few farmers are seeding wheat, but most of them are waiting for rain. The surface few inches are so dry that it will take more than an inch of rain to reach the moisture already present.

Field work consisted of hoeing weeds and getting the project ready for field day. Moisture samples for evaporation studies were taken.

C. O. Grandfield of the Agronomy Department, Kansas State College, was a visitor.

Maximum temperature, 93°; minimum, 42°; precipitation, trace.

TUCUMCARI:

Beautiful fall weather prevailed the past week, following the mid-month rains of 1.30 inches which broke the intense heat and drought. Late planted and late maturing sorghums are taking advantage of the moisture and are continuing devolopment. Earlier sorghums were too badly injured to recover, dried ripe, and in many instances have been harvested.

Work has included preparation of wheatland and seeding of increase land as well as the MC series of wheat and rye; heading and binding sorghums; harvesting broomcorn; and making sucker counts on late sorghums.

Maximum temperature, 87°; minimum, 52°; precipitation, 0.13 inch.

BIG SPRING:

Hot and dry continues to sum up the weather situation. Although the nights have cooled off somewhat, the days remain unusually hot for this time of the year. Sorghums are not maturing but are merely drying up. Milo stalks are falling before the heads get dry enough to harvest. This condition is going to make heading rather slow.

With the exception of a very few varieties, all the variety date sorghums have been harvested. Parts of the milo spacing plots were harvested because they were falling down so badly, while the rest of the plot was too green to harvest. Other work has consisted of gathering bagged heads of sorghums for seed and picking cotton.

Maximum temperature, 91°; minimum, 47°; precipitation, none.

LAWTON:

A decided drop in temperatures with a prevailing north wind throughout the week marks the only change in September weather conditions. Maximum temperatures ranged from 88° to 97°, and a minimum of 49° was recorded on the 22nd.

Harvest of experimental sorghum projects was completed during the week, and considerable threshing has been done. Most of the yields were low, and the grain was prematurely ripened.

Cotton harvest is progressing throughout the county. Approximately 1,700 bales have been ginned to date. Ginners estimate the total crop for the county at approximately 3,000 bales. A normal yield would be between 15,000 and 20,000 bales.

WOODWARD:

The weather has remained dry but not so hot or windy. The last effective rain received at this station was two months ago yesterday. No rain as heavy as one-half inch has fallen since that time. No precipitation has been received to date in September.

Crops are ripening rapidly. Considerable harvesting has been done in the cereal-sorghum project. Broomcorn and a number of kafir and milo plots have been harvested on the DLA project. Harvesting a field of Sharon kafir has been started.

James E. Smith, Jr., of the Soil Conservation Service, nursery section, was officially transferred to this station, September 1. During the week conferences of SCS and station officials were held in regard to starting the cooperative nursery work at this station.

Visitors during the week included Max M. Hoover, Senior Agronomist, SCS Nursery Section; Mr. Scott, Administrative Assistant, Division of Forage Crops; Messrs. C. E. Webster, Simon Wolff, and R. M. Moss of Ft. Worth; Mr. B. F. Kiltz of Amarillo; and Messrs. Haas, Fritz, Lowe and Sloan of the Garden City, Kansas branch station.

Maximum temperature, 93°; minimum, 46°; precipitation, none.

PENDLETON:

Hot, dry weather prevailed all week. Work on the station consisted chiefly of husking corn and hand threshing grasses from the native grass nursery. L. E. Harris, State Leader of the Weed Project, spent four days here this week, seeding plots and applying chemicals on the morning glory field.

The following results were obtained in the rotation experiments with winter wheat:

Winter wheat after-	Average of-	Bushels per acre
Fallow	22 plots	45.5
Winter wheat	2 plots	11.5
Corn	8 plots	28.1
Peas	2 plots	29.8
Pea fallow	2 plots	41.6
Sweetclover	2 plots	34.2

Visitors were Messrs. Sloan, McDole and Tower, SCS, Spokane, Washington; Edward Harvey, Food Industries Dept., Oregon State College, Corvallis, Oregon; and Lawrence Jul, Food Industries Investigator, Denmark.

Maximum temperature, 93°; minimum, 40°; precipitation, none.

DALHART:

Grain sorghums on the station show evidences of either drying to maturity for the early varieties or of drying prematurely for later varieties. Sorghums in the rotation project now promise grain yields comparable with those expected for the 1939 seasonal rainfall. One good rain the middle of August would have permitted normal or above normal yields, but that rain never came. Increase fields of Sedan kafir, and fields of Finney milo, give promise of a good seasonal yield. Variety sorghum yields on fallow would have been good except for bird damage.

Late planted sorghums will range from good to poor depending upon stored moisture at planting time. Farmers are starting to bind sorghums for feed.

Cowpeas this year are poor for the season as are also soybeans, peanuts, beans, and drilled sorghums. The corn yields, while low, will be typical of the season.

Maximum temperature, 88°; minimum, 48°; precipitation, 0.12 inch.

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DRY LAND AGRICULTURE

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U. S. DEPARTMENT OF AGRICULTURE

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REPORT FOR THE WEEK ENDING SEPTEMBER 30, 1939.

HAVRE:

Rainfall during the month of September was 1.01 inches, bringing the total from January 1 to date to 9.56 inches; only two months of the year, February and June, having had above normal precipitation. The first killing frost of the season occurred on the 24th, the growing season in 1939 being 136 days in length or 9 days longer than the station average. There was light snowfall at higher elevations but none locally.

Late dates of planting corn and sorgo were harvested during the week. Fair stands of winter wheat and winter rye have emerged on fallow, however, germination is not complete, more moisture being needed. Test weight determinations were completed in the seedhouse and increase seed was cleaned. Additional crested wheatgrass for hay was planted in field C. The apartment house and duplex dwelling porches and woodwork are receiving a coat of paint. Miscellaneous repair work at the cattle barns has also been in progress.

John J. Sturm, Agent in the D. L. A. Division, left for Bozeman where he will take work at Montana State College this winter.

Maximum temperature, 80°; minimum, 28°; precipitation, 0.25 inch.

HUNTLEY:

Numerous showers throughout the week have kept soils damp and the sky cloudy so that sub-freezing temperatures have not yet harmed even the most tender crops such as tomatoes and melons at the station, but in some neighboring localities a slight killing occurred.

Inspection of some of the winter wheat plantings indicates that moisture received during the week has penetrated to the depth of seeding in spots, but there is not enough to maintain growth should the seed germinate.

Field work consisted in harvesting the last of the seed-corn plot and cleaning seed grains.

Station visitors included Director W. W. Burr and Dr. Gary of the Nebraska station, W. L. Quayle of the Wyoming station, and R. S. Towle and Ralph Williams of the Division of Dry Land Agriculture.

Maximum temperature, 72°; minimum, 31°; precipitation, 0.44 inch.

SHERIDAN:

Except for one day the middle of the week, temperatures were for the most part comparatively low. Light sprinkles with a trace of snow occurred the first of the week, and there was a good rain the morning of the 28th. Light frost on the morning of the 26th killed some vines, but not tomatoes. Light frost occurred in spots on other dates also, leaves of sorghums in some places on the station being killed, but Sudan grass apparently not being affected at all.

Corn stover from the rotations, except the MC plots which were cut some time later than the rest, was hauled, weighed, and shredded. Dirt was hauled to some places in the roadways to divert run-off water from running over land used for plots.

Maximum temperature, 82°; minimum, 29°; precipitation, 0.79 inch.

MANDAN:

Agronomy - Temperatures dropped sharply during the week. The first killing frost of the season came on the night of September 24, when the minimum fell to 24°.

Corn was shredded during the week. It was not dry. The yields were low and spotted.

Maximum temperature, 71°; minimum, 24°; precipitation, 0.02 inch.

Cooperative Grazing Experiment - The cattle were weighed at the end of September. The gains were likely reduced because of the cool, cloudy weather during the week. The steers that were returned to the crested wheatgrass the middle of September lost weight. The grass did not hold up during the period.

Following are the gains of the steers during September and for the season:

Pasture (acres)		No. of Steers	Gains in pounds per head September	140 days
100		10	30.0	255.0
70		10	35.0	264.0
50		10	17.0	237.0
30		10	19.0	239.5
70	(rotation)	14	11.4	205.0
7	(crested wheat)	4	32.5*	240.1
12.5	(crested wheat)	6	20.8**20.0***	211.7
93	(reserve)	4	30.0	271.3

*On reserve pasture **First 15 days of month on reserve pasture ***Second 15 days of month on new growth of crested wheatgrass.

Horticulture - Harvesting of fruits has been completed. The orchards are very dry and may be subject to severe winter injury if rain does not come.

Part of the potatoes were dug on September 29 and 30. Yields were generally low, and the quality was poor. Considerable scab was present on most varieties in the variety test, where potatoes are grown on the same land once in three years. Much less scab was apparent on another plot of ground that had not previously grown potatoes. Early Ohio was the lowest yielder under test this year, while Waba and Chippawah were the highest yielders. The best rows yielded only a little better than 60 bushels to the acre.

Root crops, cabbage, squash, and pumpkins were harvested in the acre garden. The yield of root crops was good, of the others only fair. Celery was dug and stored. In spite of the drought the stalks were of fair size and good quality.

Cannas were dug and stored, and the beds were manured and spaded.

Repairing of broken glass in the greenhouse has been under way the latter part of the week and was completed Saturday.

ARCHER:

The weather during the week ending September 30 was generally cool and threatening. Two light showers occurred, totaling 0.33 inch. This precipitation may be sufficient to germinate some of the winter cereals. The first frost of the season occurred during the night of September 29. This killed the squash and tomato vines.

The fencing of the experimental pastures continued. It is hoped to start the grazing experiments soon.

State Commissioner of Agriculture R. H. McFarland, N. D. Sanborn of the U. S. Department of Agriculture Marketing Service, and N. H. French, O. E. McConnell, and A. E. McClymonds of the Soil Conservation Service were station visitors.

Maximum temperature, 80°; minimum, 29°; precipitation, 0.33 inch.

NORTH PLATTE:

Temperatures moderated this week from the high readings of the first three weeks of the month. No freezing temperatures were recorded, but twice during the week 35° were reached. The week was somewhat cloudy with a few light showers. This was the first measurable moisture received since the middle of August. Only once since 1907 has less precipitation been recorded for September than for this year. The 6-months growing season ended with a total of 9.84 inches of precipitation, or a deficit of 4.93 inches. The precipitation since January 1 totals 11.57 inches or 4.82 inches below average.

Some wheat was seeded during the week. A deep furrow drill will be used on some of the plots, hoping to seed the grain in moist soil.

A county sorghum topping contest was held at the station on Tuesday. Eight contestants participated. On Saturday, the station held its fall feeders' day. Approximately 300 farmers and ranchers were present at the meetings.

Maximum temperature, 87°; minimum, 35°; precipitation, 0.16 inch.

AKRON:

A gentle drizzle Thursday evening raised the September precipitation to 0.23 inch. The average expectation is 1.44 inches. This is the seventh September in 31 years to produce less than 0.30 inch of precipitation. The 1939 precipitation to October 1 is slightly more than 9 inches. Much cooler weather has prevailed, culminating in a 30° minimum last night, the season's first fall frost just two days later than the average date.

Preparations are about completed for seeding the bulk of the station winter wheat. There is still not enough surface moisture to warrant expectation for immediately emerged stands, so the actual seeding date appears to matter but little.

Maximum temperature, 89°; minimum, 30°; precipitation, 0.15 inch.

COLBY:

The weather this week has been changeable and much cooler, but still dry. Wednesday and Thursday were windy with some dust and soil blowing. Wheat seeding has been in progress among the farmers in the hope that rain would fall.

The winter wheat plots on the station are still unseeded. In the date of planting test three seedings have been made on fallow ground during September, but none are up. The drill gets the wheat down to moist ground, but there is not enough moisture to sprout the grains before the loosened soil dries out. Just how long seeding should be delayed is the question bothering us as well as many farmers. Late October seeding, even after a rain, has been poorer than earlier seeding before a rain during these several droughty years.

The Sumac sorgo, kafir, and feterita plots have been harvested. The milo will be topped by hand. The corn was husked yesterday and today. The yields were small. The fallow plot, which yielded almost 10 bushels, was the best; and the one which is diked to hold all the water on the plot was second with a yield of 5 bushels. The diked plot yielded a fraction of a bushel more than M. C. F, the listed plots next to it.

Maximum temperature, 87°; minimum, 33°; precipitation, 0.05 inch.

HAYS:

The weather during the week has been generally quiet and cooler and dry except for a small rain the night of the 28th.

Crop conditions remain the same as reported last week, that is, at a standstill or going backward. Where sufficient growth has been made to justify, the feed crops are now being harvested.

Surface soil is too dry for safe seeding of wheat. The rain moistened the soil only an inch or slightly deeper. This shower accompanied by a heavy wind really caused a lot of damage to wheatland ready for wheat. The driving rain broke down many of the little clods and leveled the surface soil to a smoothness that will drift very easily. It seems to me the danger of soil drifting, or erosion, is now greater in this vicinity and the adjoining county south than it has been at this time of the year for several seasons. For many fields it now looks as if about the only thing that can make them safe is a good soaking rain followed by seeding or cultivation while the soil is as wet as it can well be worked. Without such a rain a deep cultivation may become necessary to prevent wind erosion.

A small percentage of farmers are now seeding. Some are sowing shallow, laying the wheat in the dry soil hoping it will escape worm injury and be ready to germinate as soon as it rains. Some are sowing deep, laying the seed very shallow in moist soil. This is done with deep furrow drills. Between the drill-rows ridges are composed of fine dry soil, a few clods, and considerable dust. The majority of farmers are still waiting for rain. The number now drilling has been increased for the reason that since the recent rain, it is necessary to do something with the soil to prevent soil drifting.

Maximum temperature, 95°; minimum, 37°; precipitation, 0.40 inch.

GARDEN CITY:

The first measurable precipitation since August 18 fell this week, but it only amounted to 0.02 inch. This September is the driest on record. The total thus far this year is 8.73 inches, the average for the same period is 14.84 inches. One of the worst dust storms thus far this year rolled in from the north Thursday evening, but it lasted only a short time.

No wheat has been seeded on the D. L. A. project as yet, due to drought. A few farmers in this area are drilling in the dust, in hopes moisture will come later.

Soil moisture samples were taken on milo plots.

L. C. Aicher, Superintendent of Fort Hays Station, J. M. Ferguson, Extension Engineer, L. L. Compton, Extension Agronomist, Kansas State College, and A. B. Erhart, Superintendent of Southwest Kansas Experimental Fields, were station visitors. Approximately 200 farmers and business men attended field day.

Maximum temperature, 92°; minimum, 37°; precipitation, 0.02 inch.

TUCUMCARI:

Beautiful fall weather continued during the week, with marked drop in temperatures at the close. Late crops and ranges have revived to a marked degree since rains of 1.30 inches at mid-month.

Evaporation for the month was highest of any September on record. Mean temperature for the month was unusually high. The precipitation was only slightly below normal, but at the end of the month the deficiency for the preceding 9-month period was 3½ inches.

Work included heading, binding and removal of bagged heads of sorghums; fencing; and weed clean-up. Most of the rotation kafir and sorgo will not be cut for some time, since crops are still maturing.

Dr. Carleton R. Ball, Secretary of the Coordinating Committee of the T. V. A., visited the station en route back to Washington, D. C. from a trip to the West Coast.

Maximum temperature, 90°; minimum, 41°; precipitation, none.

DALHART:

All but two of the grain sorghum varieties on fallow were harvested this week. Other harvesting consisted of most of the forage sorghums on fallow, the cowpea variety test, a few rotation plots of cowpeas, and three rotation plots of milo. Except for bird damage to the grain sorghums on fallow, excellent yields would have been obtained.

Part of the week was devoted to the weighing of Sudan grass in the method of seeding test and in miscellaneous tests. Other work consisted of the final notes on the plots that are ready or nearly ready to harvest. On account of the late seeding, only a few of the plots will do to harvest before frost or at least near the average frost date. Corn and sorghums on early prepared land will do to harvest this next week.

Maximum temperature, 92°; minimum, 45°; precipitation, trace. The seasonal precipitation was 3.50 inches below normal.

BIG SPRING:

A norther September 29 broke the longest period of hot weather in September that has been recorded at this station in many years. Rainfall for the month was none, the first time since 1922 when not even a trace was recorded for the month of September.

There will be only late, if any, wheat pastures this year. Normally wheat for grazing is seeded in early September, but to date is has been too dry to plant.

Cotton picking has required the greater part of the time of the station force during the past week. During this time the rotations and part of the varieties have been picked over. It is a slow job, as the cotton from these prematurely opened bolls seems stuck in the burrs, which makes it difficult to pick. It is estimated that 80 per cent of the crop is being obtained of the first picking. Other work has consisted of harvesting increase Hegari and picking cowpea seed.

Maximum temperature, 95°; minimum, 46°; precipitation, none.

LAWTON:

This was one of the four driest Septembers on record in the last 67 years. The monthly precipitation was recorded as a trace in 1875, 0.0 in 1893, a trace in 1904, and 0.0 in 1939.

The average maximum temperature for the first half of the month was 101°, and the monthly mean temperature of 79.9° was 5.9° above the long-time average. A minimum of 49° was recorded on the 29th.

The 10.765 inches of evaporation for the month was the highest recorded since station records were begun in 1915. The total precipitation of 14.40 inches for the 9 months, January - September, leaves a deficiency of 9.57 inches.

Cotton ginners report a sharp depreciation in grade and staple of cotton as it comes to the gin the past two weeks. The staple is much shorter, and the weak, dry, fluffy lint is difficult to press. Hulls and meal are being shipped in from southern states for feed.

A good deal of wheat has been "dusted in", and there has been a sharp increase in the applications for Government Wheat Insurance.

The shortage of water, the lack of grass, and the near failure in the production of roughage are forcing a heavy liquidation of livestock. There is every indication that farmers will require greater financial assistance before another crop can be produced than in past years.

WOODWARD:

The past week has been cool, dry, and not very windy except one day and part of one night. A trace of precipitation on the 26th was the first recorded since August 18. A major proportion of the plots on the DLA project were headed and then bound during the week. A few are not yet ripe enough to harvest. Seed has been selected from increase grain sorghums fields and the crops headed. Some work has been done in preparation for wheat planting if and when it rains. The second date on the Cereal project is being planted in the dust today. Regular soil moisture samples were taken. Some of the seed from the tomato selections has been cleaned and dried. Installation of the cistern and pressure tank for emergency water service has been completed.

Albert W. Crain, who has been assisting summers on the sorghum project at Lawton, has been transferred to this station to assist Mr. Sieglinger this fall.

It was reported that there was a light frost in the low spots in the surrounding country last night.

Maximum temperature, 94°; minimum, 36°; precipitation, trace. Precipitation for September, trace.

PENDLETON:

Another week passed without rain. Precipitation during September amounted to 0.31 inch; the 10-year average is 0.48 inch. A few farmers in the Columbia River Basin are seeding their wheat in the dust. In most sections there the surface soil is dried out to a depth of 4 to 7 inches. In the Pendleton-Walla Walla areas most farmers will hold off their fall seeding until at least November 1, in case no rains are received during October.

A little seeding was done on the station on the 29th with two types of deep furrow drills. Some moisture was turned up when seeding; the stands will probably be uneven.

The following results were obtained with the Dempster and Van Brunt deep furrow seeding methods with spring sown grain in 1939:

Dempster deep furrow drill 14 inch spacing, average of 3-1/5 acre plots, 32.2 bushels.
Van Brunt deep furrow drill 12 inch spacing, average of 3-1/5 acre plots, 32.2 bushels.
Van Brunt single disk drill 6 inch spacing, average of 3-1/5 acre plots, 33.2 bushels.

Visitors were Messrs. Johnson and Thompson, Forest Service, Portland, Oregon; Dr. W. L. Powers, Soil Scientist, Oregon State College, Corvallis, Oregon; and Mr. A. E. Kocher, Soil Scientist, S. C. S., Spokane, Washington.

Maximum temperature, 83°; minimum, 30°; precipitation for September, 0.31 inch.

JUDITH BASIN:

Temperatures since the last report were somewhat lower with a killing frost recorded on the 28th. Precipitation was light with a total of 0.08 inch. The wind velocity was high on Wednesday when the average for the 24-hour period was 11.5 miles per hour.

Weekly weights of cattle on pastures were taken.

The Students Assistants have returned to Bozeman for the opening of the fall quarter of school.

From January 1 to September 30 the total precipitation was 9.93 inches. This is but 78.2 percent of the past 30-year average. June was the only month to exceed the monthly average.

The total monthly precipitation for September was 0.84 inch which is about 48 percent below normal.

Maximum temperature, 77°; minimum, 27°; precipitation, 0.08 inch.

BELLE FOURCHE: (Report for the two weeks ending September 30, 1939.)

Clear, warm weather prevailed during the first half of the period, but the second week was comparatively cold and unsettled. The first snow of the season was received on September 25, but the snow melted as it fell. The storm was of about 12 hours duration, but only 0.42 inch precipitation was recorded. A light frost, the first this fall, occurred the morning of September 29, when the sky cleared following a light rain. A heavy frost was received the next morning, when the temperature was below freezing approximately 4 or 5 hours, killing tender garden crops, potato vines, sorgo, and corn.

Only 0.61 inch precipitation was recorded during September, as compared with the average of 1.34 inches for the month. The total precipitation for the year to date, 9.06 inches, is 4.59 inches less than the average for the 9-month period.

The recent snow and light rains were not sufficient to assure the germination of fall grain, but winter wheat and winter rye were seeded on rotation plots, owing to the lateness of the season. Very little grain will germinate until additional rain or snow is received.

Dr. John H. Martin, Division of Cereal Crops and Diseases, visited the station on September 23.

Maximum temperature, 91°; minimum, 28°; precipitation, 0.48 inch.